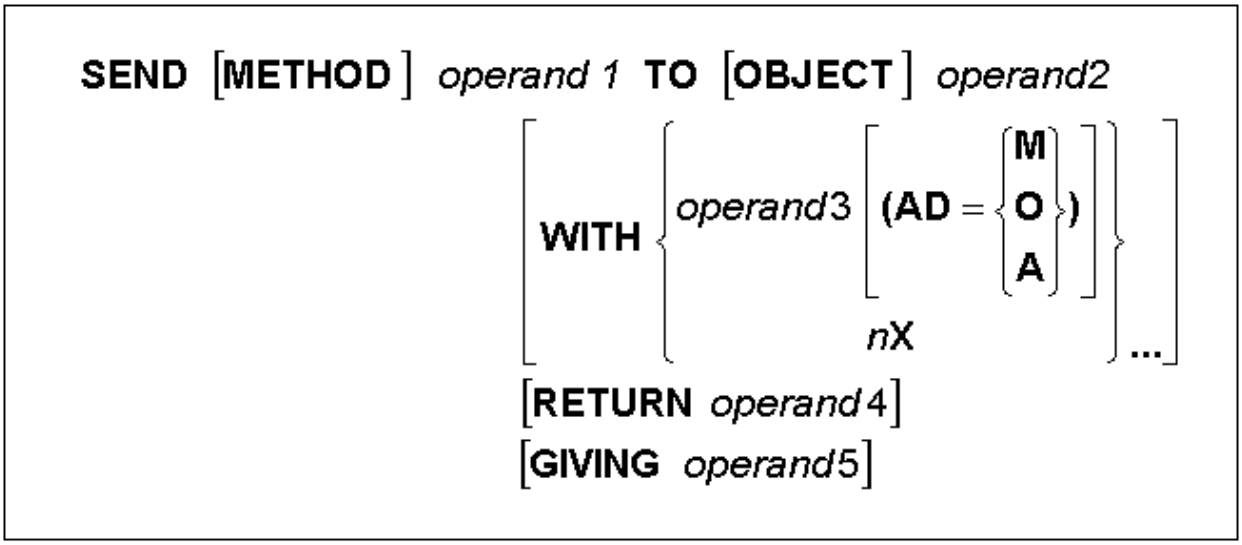
SEND METHOD



Operand	Possible Structure					Possible Formats											Referencing Permitted	Dynamic Definition
Operand1	C	S				A											yes	no
Operand2		S														O	no	no
Operand3	C	S	A	G		A	N	P	I	F	B	D	T	L	C	G	O	yes	no
Operand4		S	A			A	N	P	I	F	B	D	T	L	C	G	O	yes	no
Operand5		S			N				I									yes	no

The formats C and G can only be passed to methods of local classes. For more information, see the section Local Classes.

Function

The SEND METHOD statement is used to invoke a particular method of an object.

Note: Optional parameters (*n*X notation) are available with Version 4.1.1 and all subsequent releases. The AD option is available with Version 4.1.2 and all subsequent releases.

Method-Name - operand1

Operand1 is the name of a method which is supported by the object specified in *operand2*.

Since the method names can be identical in different interfaces of a class, the method name in *operand1* can also be qualified with the interface name to avoid ambiguity.

In the following example, the object #O3 has an interface Iterate with the method Start. The following statements apply:

```
* Specifying only the method name.
  SEND "Start" TO #O3
  * Qualifying the method name with the interface name.
  SEND "Iterate.Start" TO #O3
```

If no interface name is specified, Natural searches the method name in all the interfaces of the class. If the method name is found in more than one interface, a runtime error occurs.

Object Handle - operand2

The handle of the object to which the method call is to be sent.

Operand2 must be defined as an object handle (HANDLE OF OBJECT). The object must already exist.

To invoke a method of the current object inside a method, use the system variable *THIS-OBJECT.

Parameter - operand3

As *operand3* you can specify parameters specific to the method.

In the following example, the object #O3 has the method PositionTo with the parameter Pos. The method is called in the following way:

```
  SEND "PositionTo" TO #O3 WITH Pos
```

Methods can have optional parameters. Optional parameters need not to be specified when the method is called. To omit an optional parameter, use the placeholder 1X. To omit n optional parameters, use the placeholder *n*X.

In the following example, the method SetAddress of the object #O4 has the parameters FirstName, MiddleInitial, LastName, Street and City, where MiddleInitial, Street and City are optional. The following statements apply:

```
* Specifying all parameters.
  SEND "SetAddress" TO #O4 WITH FirstName MiddleInitial LastName Street City
  * Omitting one optional parameter.
  SEND "SetAddress" TO #O4 WITH FirstName 1X LastName Street City
  * Omitting all optional parameters.
  SEND "SetAddress" TO #O4 WITH FirstName 1X LastName 2X
```

Omitting a non-optional (mandatory) parameter results in a runtime error.

AD=

If *operand3* is a variable, you can mark it as non-modifiable (AD=O), as modifiable (AD=M) or as for input only (AD=A). The default is AD=M.

If *operand3* is a constant, AD cannot be explicitly specified. For constants AD=O always applies.

AD=M

This is the default, the passed value of a parameter can be changed in the method and the changed value is passed back to the caller, where it overwrites the original value.

If a method is implemented in Natural and the parameter is defined with BY VALUE in the methodŸs parameter data area, no value is passed back.

If a method is not implemented in Natural, the behavior depends on the method implementation. The parameter is then passed BY REFERENCE. Whether the external component accepts a by reference or by value parameter is described in the documentation of the external component. It can also be viewed in the Natural Component Browser.

AD=O

If you mark a parameter with AD=O, the passed value can be changed in the method, but the changed value is not passed back to the invoking object. The caller retains its original value.

If a method is implemented in Natural, the parameter is treated like it was defined BY VALUE in the methodŸs parameter data area (see the section PARAMETER Clause in the description of the INTERFACE statement).

If a method is not implemented in Natural, the behavior depends on the method implementation. The parameter is then passed BY VALUE. Whether the external component accepts a by reference or by value parameter is described in the documentation of the external component. It can also be viewed in the Natural Component Browser.

AD=A

If you mark a parameter with AD=A, its value will not be passed to the method, but it will receive a value from the method. AD=A fields will be reset to empty before the method is invoked.

For a field defined with BY VALUE in the method's parameter data area the caller cannot receive a value. In this case, AD=A only causes the field to be reset to empty before the method is invoked.

If a method is not implemented in Natural, the behavior depends on the method implementation. The parameter is then passed as an initialized variant. Whether the external component is able to return a value is described in the documentation of the external component. It can also be viewed in the Natural Component Browser.

Parameter - nX

This notation is not available on mainframe computers.

With the notation nX you can specify that the next n parameters are to be skipped (for example, 1X to skip the next parameter, or 3X to skip the next three parameters). This means that for the next n parameters no values are passed to the method.

For a method implemented in Natural, a parameter that is to be skipped must be defined with the keyword OPTIONAL in the method subprogram's DEFINE DATA PARAMETER statement. OPTIONAL means that a value can - but need not - be passed from the invoking object to such a parameter.

RETURN - operand4

If the RETURN clause is omitted and the method has a return value, the return value is discarded.

If the RETURN clause is specified, *operand4* contains the return value of the method. If the method execution fails, *operand4* is reset to its initial value.

Note:
For classes written in Natural, the return value of a method is defined by entering one additional parameter in the parameter data area of the method and by marking it with 'BY VALUE RESULT'. (For more information, see the section PARAMETER Clause.) Therefore the parameter data area of a method that is written in Natural and that has a return value always contains one additional field next to the method parameters. This is to be considered when you call a method of a Natural written class and want to use the parameter data area of the method in the SEND statement.

GIVING - operand5

If the GIVING clause is not specified, the Natural run time error processing is triggered if an error occurs.

If the GIVING clause is specified, *operand5* contains the Natural message number if an error occurred, or zero on success.

